defined, such as: articles in Italian and English, articles written from 2000 to date, sealings performed on healthy teeth. The exclusion criteria have been: papers which were not free for the consultation and items not relevant to the research. Then, the research has been proceeded by consulting sites of interest and scientific literature in the dental and oral hygiene fields. Thanks to this research, in vivo clinical studies based on an evaluation over time have been collected and they have allowed this literature review to be carried out.
RESULTS: The results of the review showed that some adhesive systems applied before the sealant had a significant positive effect on micro-mechanical and micro-infiltration retention rates and, consequently, they proved to be advantageous in preventing the carious pathology of which it is the main objective. This is because the smaller molecular size of adhesives, compared to that of sealants, allows greater penetration into the microcavities of the etched enamel, leading to a consequent greater bond strength. Furthermore, concerning the type of adhesive to be used, it has emerged that etch-and-rinse adhesive systems are the most effective for this practice as they can create a better microretent bond compared to self-etching systems. The fourth generation etch-and-rinse adhesive systems are more suitable in cases where it is possible to obtain a completely dry operating field, whereas in cases where this is not possible, it is preferable to use a fifth-generation ethanol-based adhesive.
CONCLUSIONS: In conclusion, it has emerged that the use of the adhesive system, if used respecting the correct procedure and the necessary precautions, can be applied in place of the traditional technique.

Fluorine prophylaxis and the caries prevention: current indications in domiciliar and professional use

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BACKGROUND: The purpose of this work is to evaluate the current importance of the use of fluorine in dental caries prevention. In addition, emphasis will be placed on the various safeguards available for these applications and the state of the art of their use. One of the Dental Hygienist's duties is the prevention of dental caries in young peoples through the correct oral health education. That means providing advices and guide in the use of different methods for the administration of fluorine according to the different needs of the patient (individual risk level). Moreover the Dental Hygienist has to proceed with the professional topical application of various prophylactic means and above all to promote health education.
METHODS: Search engines such as pubmed and cochrane library and textbooks on the subject matter were used using different combinations of keywords; which: fluoride varnish, fluoride toothpaste, water fluoridation, sodium fluoride, stannous fluoride, fluoride gel, fluoride foam. For the purpose of this review of the literature the scientific articles examined were from 2010 to today.
RESULTS: Analyzing both textbooks and articles it is clear how, even today, the most used and effective dental caries prevention method still results in the administration of fluorine. The latter is prescribed both domiciliary and professionally. To date, however, we must put the patient in the foreground and therefore we must evaluate, according to the subjective risk of the onset of caries, the most appropriate method for the acquisition of fluorine. From the Literature's review it has been stated therefore that is still important for the entire population to wash the teeth twice a day with a toothpaste containing at least 1000 ppm of fluorine. It has also been found that, according to the subjective risk of caries development, for patients with medium risk, in addition to dentifrices, it is possible to prescribe mouthwashes or gels to use at home, while for high risk patients the use of fluoride varnish is more efficient thanks to her consistency which allows a longer stay with the tooth surface. It is the Dental Hygienist's task to identify and suggest the proper individual use method based on personal caries risk that can be performed at home and when it is appropriate the professional applications of fluoride products at the dental office. Protocols for selection and use have been identified.
CONCLUSIONS: The revision work carried out reiterated the importance that the use of fluorine preserves in caries prevention. It was also possible to identify current protocols that allow the dental hygienist to determine the most appropriate, home and / or professional use in the study of the most suitable fluoride products for individual prevention of caries based on the risk of the individual subject

Clinical efficacy of lactobacillus reuteri containing lozenges in the supportive therapy of generalized aggressive periodontitis: six months results of a randomized placebo-controlled study

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BACKGROUND: The aim of this 12-months mono centric double-blind randomized placebo–controlled clinical study was to evaluate the efficacy of Lactobacillus Reuteri containing lozenges as adjuvants during the supportive therapy of patients affected by Aggressive Periodontitis(AgP) with residual pockets. Clinical endpoints are pockets closure and BoP reduction.
METHODS: Patients that were treated for AgP trough Full Mouth Instrumentation and following periodontal supportive therapy for at least 6 months were selected. A sample size of 20 patients was deemed necessary and patients were randomly divided in two groups. The test group received two 3-months-long administrations of L. Reuteri (2 lozengens/day after brushing) with a 3-months washout period, while the control one received a placebo with the same modality. The patients were taught to slowly chew the lozenges until they dissolve into saliva and not to eat or drink during the subsequent hour. Professional follow-up and oral hygiene sessions were fulfilled quarterly. Outcome measures were: tooth survival, complications and adverse events, Probing Pocket Defect, Probing Attachment Level, Bleeding on Probing, Plaque Index patient compliance and feedback about treatment. Measurements were collected at 3, 6, 9 months and 12 months. Binary coded outcomes were modelled with multilevel mixed models using binomial family function and con-

sidering three nested random levels, patient, tooth and sites.
RESULTS: At 6 months no drop out, tooth loss, complications or adverse event were recorded. Patients reporting a baseline PPD higher than 4 mm increased over time probability of closure of probing pocket, especially if they used probiotic, although interaction between type of treatment and visit is not statistically significant. BoP decreased over time in both treatments but reduction is more remarkable in patients treated with probiotic (from 14.6% to 11.6% in controls and from 22.0% to 9.9% in cases, interactions p≤0.051). Treatment partially influenced also PAL, reduction of plaque was observed in both treatments (from 16.7% to 10.7% in controls and from 24.6% to 15.4% in cases) although interaction between treatment and time was statistically significant only at visit 1 (p=0.003).
CONCLUSIONS: After 6 months, a significantly higher rate of pocket closure was observed in the treatment group. Pocket closure in the placebo group was satisfactory but inferior. BoP reduction also suggest probiotics efficacy in the management of periodontal inflammatory rate. Within the limitation of the study, the use of L. Reuteri probiotics lozenges improved clinical out-comes during the maintenance therapy in patients with diagnosis of AgP, and could be considered a safe adjunct to the supportive therapy in this group of patients.

Efficacy of sonic toothbrush compared to manual brushing in reduction of plaque index and gingival index: randomized clinical trial

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BACKGROUND: The aim of this study is to compare in healthy subjects two methods (manual VS sonic) of tooth brushing in terms of impact on the bleeding on probing (BoP), gingival index (GI) and plaque index (PI) at 6 weeks after one session of Professional Mechanical Plaque Removal (PMPR) with Erythritol Powder and ultrasonic tips.
METHODS: 32 healthy subjects, after GBT, were randomly trained and motivated to use sonic or manual toothbrush. Binary coded outcomes (1/0) BoP, GI, PI were collected at baseline and after 6 weeks (visit 1), aggregated as counts within patient for each visit and then modelled using Generalized Poisson mixed models. Differences between two methods (manual VS sonic) over time, were estimated.
RESULTS: Generally, the sonic toothbrush use, statistically reduced BoP, GI and PI more than manual method. In particular, the reductions of BoP and GI were about 3 times higher than manual method and the PI was 4 time higher (p<0.0001). Additionally, differences between baseline and visit 1 among two tooth-brushing methods, were more remarkable using sonic toothbrush. Mean reductions over time were 85.4% for BoP, 92.3% of PI and 78.0% of GI using sonic toothbrush (p<0.0001) and 60.3%, 68.6% and 35.4% for BoP, PI and GI respectively with the manual one (p<0.0001).
CONCLUSIONS: The results of this study indicate that sonic toothbrush can significantly help in reduction of plaque and gingival margin inflammation more than a manual toothbrush. Moreover, this study shows that the benefits of professional oral hygiene are influenced by home-use compliance in terms of the outcomes, and it may be that the greatest improvements in oral health derive from devices that increase compliance. In addiction to instruction and motivation, satisfaction questionnaires were administered to patients, and it was found that sonic toothbrush is most appreciated than manual one, due to the greatest ease of use and to the comfort perceived during brushing. It can be concluded that sonic toothbrush gives more benefits in terms of clinical results and patient compliance compared to the manual one.

Efficacy of disclosing plaque agent as a guide to the supra-gingival biofilm removal: randomized clinical trial

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BACKGROUND: Evaluate the efficacy of disclosing plaque agent as a guide to the supra-gingival biofilm removal during recall appointment, in periodontally healthy patients, with a plaque index exceeding 25%.
METHODS: 32 healthy patients, who needed prophylaxis, divided in two groups, were treated either with (A) or without (B) disclosing plaque agent application before treatment. After therapy, disclosing plaque agent was applied and three photos (frontal, lingual and palatal) were taken and digitalized to quantify residual plaque area (RPA). The quantification of RPA was made thanks to an image processing software (Image-J) that allowed us to highlight the percentage of area with residual plaque colored by disclosing plaque agent on the tooth. Statistical evaluations were performed separately for different portions, specifically overall measure and gingival margin only. Treatments effect were tested using linear mixed models. All data analysis will be carried out according to a pre-established analysis plan by a biostatistician blinded to group allocation. Comparison between treatments will be performed using independent sample t-Test. All statistical comparisons will be conducted at the 0.05 level of significance.
RESULTS: Percentage of tooth surface with RPA was significantly higher in patients treated with B compared to A, both for the overall measurement (p=0.006) (OR = 2.68, 95%CI: [1.35;5.33]) and gingival margin only (p=0.004) (OR = 2.44, 95%CI: [1.36;4.38]), with an interaction 90.1 (17.8) that can be interpreted the proportional variation of the OR (B vs A) in gingival margin only versus the overall measure . That is the OR in gingival margin is reduced by approximately a 10% compared to the overall measure.
CONCLUSIONS: Within the limits of this study we can confirm the efficacy of disclosing plaque as a guide to remove supra-gingival biofilm during the professional hygiene, especially in less accessible areas, as gingival margin or interdental space. The clinical approach that not include the guide of the disclosing plaque is still valid, therefore it's up to the clinician the evaluation and pick the better technique in the different patients and clinical set-ups.